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Key messages

- The governments of Mali, Benin and Togo place a high priority on providing collective energy services: energy that delivers health and education benefits and clean water to society.
- These services are prioritised over the provision of household energy, because collective energy services play an important role in development and poverty alleviation.
- However, renewable energy has not been fast-tracked as a way of increasing societies' access to energy. The lack of recent, reliable data on renewable energy, energy efficiency and the vulnerability of the energy sector to climate change is no excuse for inaction.
- All three countries are decentralising power to subnational governments. It is important that the institutional and regulatory frameworks define and reinforce the role of these decentralised authorities in energy policies and programmes.
- The key to defining reasonable timeframes and priorities for national energy policy and programmes is to involve sectors beyond the energy sector, such as health, education, decentralisation and development, in decision-making committees.

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Working towards a Smart Energy Path: Experience from Benin, Mali and Togo

Three West African countries – Benin, Mali and Togo – have participated in the project 'Energy, Ecodevelopment and Resilience in Africa (EERA)', which offers lessons to other countries on approaches that can be taken toward a 'Smart Energy Path'.¹ This strategy aims to meet peoples' energy needs in an environmentally sustainable, resilient way, and is guided by a participatory decision-making process.

At present, energy services in the three countries are inadequate and unsustainable. To overcome this, the EERA project reinforced national technical and institutional capacities and implemented a multi-sectoral participatory approach to decision-making in each country. This went beyond the ministries in charge of energy and included analyses of national energy systems and policies. The project created national and regional liaison committees to promote the principles of the Smart Energy Path to decision-makers and encourage their integration into the institutional energy framework of each country.

Energy is critical to the lives and livelihoods of people in developing countries, essential for everything from cooking, heating, lighting, refrigeration, grinding grain and pumping water to transportation and communication. However, energy services are often of very poor quality in sub-Saharan Africa. For example, in Togo only an estimated 9% of rural and peri-urban health centres have access to modern energy services, and only 24% of upper secondary schools and 2.5% of primary schools in rural areas are electrified.² In 2010, less than 4% of the rural population in Benin and Togo, and less than 6% in Mali, had access to electricity. Benin and Mali have established agencies that are responsible for

rural electrification, but Togo has yet to create one, as planned in its new energy policy. A renewable energy agency was established in Mali in 2015. Given their remit, these agencies would be well positioned to support decentralised electricity supply in rural areas rather than extending the national electricity grid, which fails to serve over 90% of the rural population in each country.³

The energy system of West African countries is highly vulnerable to climate change. Fuel wood supply is affected by climatic variability and hydropower plants – which provide over half the electricity consumed in Mali – are highly sensitive to rainfall, often experiencing a 20%

drop in production during years of low rainfall. Benin imports 90% of the electricity consumed; a large portion of it is from hydropower plants in neighbouring countries. This results in a double vulnerability: to both import fluctuations and climate change. In Togo, 75% of thermal generating capacity is located in coastal areas, which are at risk of flooding.⁴

The EERA project aimed to identify the conditions for a Smart Energy Path in Benin, Mali and Togo. Its goal was to provide energy services that are environmentally sustainable, resilient and which follow the principles of participatory governance, thus enabling collaboration among national institutions and energy stakeholders in planning and implementation. The project gathered knowledge and information on national energy issues, while strengthening the capacity of national energy officials to define the strategic steps of a Smart Energy Path.

Two pillars of the Smart Energy Path framework – a multidimensional assessment of the energy context and a participatory approach – brought together all relevant ministries and non-governmental stakeholders who are directly or indirectly affected by energy policies and strategies. Despite the challenge of holding a space for many competing views and priorities, the process was constructive.

Principles of a Smart Energy Path

The Smart Energy Path methodology is an approach to energy planning that aims to meet peoples' needs and aspirations while at the same time being compatible with

environmental sustainability and participatory governance. It promotes diverse, modern energy services and technologies that rely on renewable energy flows at a scale, geographic distribution and energy quality designed to meet end-user needs. It can be applied at the local (community) or national scale. Smart Energy Paths promote participatory governance in a continuous and open process of collaboration among all stakeholders who are directly or indirectly involved in the energy decision-makers' process.

The methodology involves an analysis of the current situation (base year) of the country's socioeconomic, energy, technology and vulnerability characteristics; a definition of future energy service needs of the population, based on a socioeconomic and development outlook; the identification of priorities in terms of both energy services needs and ways to satisfy them; and the definition of technology and policy scenarios to meet future needs.

In the first stage, the national energy system and policy are assessed using a multi-dimensional methodology called 'Processing Information for Energy Policy and Ecodevelopment', or 'Traitement de l'information pour les politiques énergétiques et l'écodeveloppement' (TIPEE) in French.⁵ TIPEE uses 24 rigorously selected indicators to assess how conducive national energy policies are to a country's ecodevelopment. The indicators relate to environmental, social, economic, technical and participatory aspects, and underscore the importance of high-quality information and

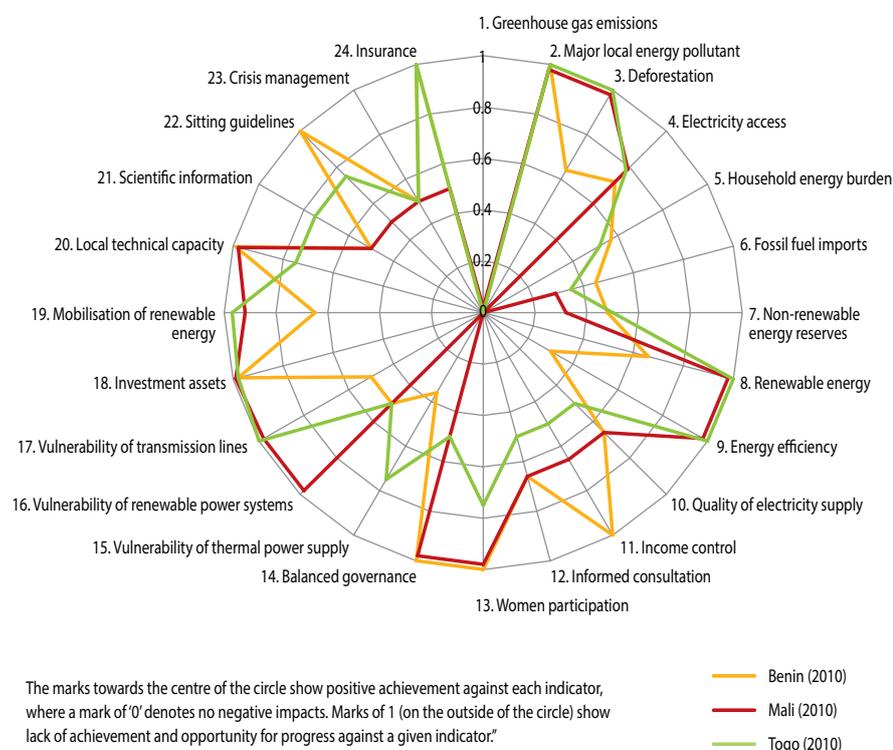
early public involvement, as well as the vulnerability or resilience of the energy system to climate change. TIPEE also highlights established national assets on which a sustainable energy policy can be built. Taken as a whole, the indicators assess a country's progress toward better energy management, while identifying gaps in data. Project teams in Benin, Mali and Togo applied TIPEE using 2010 data.⁶ The results are shown in Figure 1.

The need for a multi-sectoral participatory approach

Who defines the energy policy? Who plans access to modern energy services? Who has the authority to implement plans and strategies? Who has the technical skills? Defining a Smart Energy Path framework requires putting aside certain supply-side planning reflexes and widening the panel of actors to include institutions that might, at first glance, seem detached from the energy system. However, these institutions can be seen as stakeholders under a cross-cutting approach to energy system evaluation (see Box 1).

The multidimensional nature of the indicators required a multi-sectoral and multidisciplinary analysis. Experts from the ministries of energy and environment, universities, civil society, and independent consultants were involved in the national teams responsible for the analysis. After a capacity-building workshop, with participation of the three national teams, each team gathered publicly available data needed for each of

Figure 1. Results of the TIPEE analysis of Benin, Mali and Togo



Source: HELIO-International (2014c)⁷

the indicators. 'Proxy' or substitute data were selected when information was missing (e.g. for energy efficiency or installed distributed renewable electricity). Indicators were analysed both individually and together. The validation process followed a two-stage approach that involved a larger number of national stakeholders: i) through a technical meeting aimed at presenting and discussing preliminary results, final outcomes and conclusions, and ii) in a second meeting in which results were presented to national decision-makers, who then formulated recommendations for future actions.

In addition to the national teams responsible for the analyses, National Liaison Committees were established in Benin, Mali and Togo, tasked with reinforcing the conclusions and recommendations and ensuring their dissemination and application by decision-makers. Given the cross-sector role of energy services, these committees were comprised of government officials beyond the energy sector (including the environment, development, health and education sectors), civil society organisations and academia. For example, the National Liaison Committee of Benin comprises representatives of the ministry of health, of the ministry of decentralisation, and of a local municipality, in addition to the energy ministry. In Mali the Committee includes, in addition to the ministry and agencies responsible for renewable energy, biofuels, energy access, representatives from the ministries of planning, health, poverty eradication. Finally, the same Committee in Togo involves representatives of the ministry of

Box 1. Prioritising energy needs

Not all outstanding energy service needs can be met at the same time. A Smart Energy Path needs to determine communities' priority needs before planning the staged implementation of an energy services access programme. It is therefore critical for stakeholders to prioritise their energy service needs early in the policy development process. Such a prioritisation exercise should be carried out at both the project level and the national level, with complete participation of all stakeholders.

The top three priorities identified in an informal prioritisation exercise with national stakeholders of Togo included:

1. Energy for access to clean water
2. Electrification of health centres
3. Clean and efficient solutions for cooking and heating water.

Bringing electricity to households, which is usually at the heart of rural electrification plans, was only in fourth priority, along with electrification of schools and energy for irrigation. It is interesting to note that in this group, all three priorities concerned health-related energy services.

education and ministry of the development of the base. The National Liaison Committees have been very engaged throughout the project and have established priority actions based on conclusions from the national analyses and discussions. They expect to continue this collaboration well beyond the end of the project, pending sufficient funding.

Lessons from planning Smart Energy Paths

Data access: crucial but not a reason for inaction

Accessing recent and reliable data was not easy in the three countries. In particular, finding data on industrial energy efficiency, distributed renewable energy, gender information and local pollution proved to be a challenge. Moreover, the multidimensional nature of the analysis forced national experts to learn to use new sets of data and contact stakeholders they were not used to collaborating with. Initially, local teams felt they would not be able to complete the required analysis, until they realised: i) other ministries, agencies, or universities may have the required data and were willing to share them; ii) 'proxy' or substitute information could be used to compensate for the lack of specific data, without reducing the value of the analysis.

For example, given the difficulty in obtaining detailed information on the energy efficiency of the industrial sectors of the three countries, the project team proposed to analyse the energy intensity of the economy as a whole. Similarly, the contribution of renewable energy to the national energy balance was limited to

hydroelectricity in Benin and Togo due to the lack of information on the other forms of renewable energy. However, the team in Mali decided to use national studies⁸ to estimate the contribution of renewable beyond hydropower. In such cases, the need for better data was integrated into the recommendations, and national experts accepted that the lack of good data need not be an excuse for delayed action.

Thinking outside the box

The multidimensional analysis of the energy system and the priority given to energy service needs required national experts to think differently – for example, to focus on the needs of end-users rather than on conventional supply-side strategies. Initial versions of national assessments usually focus on descriptions of the indicators and lack analysis of the drivers behind the indicators. Reflections on the Togo Smart Energy Path framework were at first limited to the usual, general recommendations to promote renewable energy and energy efficiency. Yet after several meetings, discussions and reviews of case studies, a mutual confidence developed during the project and led to a shift in thinking.

To be successful, the project needed good guidance rather than predefined solutions, as well as a sufficiently long planning time so that teams had could develop and adapt their own ideas – and gain greater ownership of planning and implementation. And although national consultants could have made a high-quality and possibly faster analysis given their expertise and availability, the results of this

project showed that it is critical to involve government officials in order to ensure ownership by stakeholders and buy-in from decision-makers.

Participatory governance: A driver of change

The inclusion of a wide range of sectors, including non-energy sectors, in the development of energy policies helps to enrich the process. To reach solutions that take into account the full range of needs and priorities of all stakeholders, the process needs to bring together not only the ministries and experts of the sectors of energy and environment in the definition and implementation of energy policies, but also governmental and non-governmental experts in health, education and development, as well as local authorities.

This was challenging at times, given the many competing views and priorities. For example, in one country, strong discussions arose about the respective roles of the ministries of energy and of the environment in the definition of the energy policy and in the international climate negotiations. In another example, some participants questioned the need to involve stakeholders from the education and health sectors in the Liaison Committee, stating: "they don't know anything about energy". In this way, the participatory setting allowed existing resentments and preconceptions to emerge and be openly discussed, and in the end all participants agreed that the collaboration was positive and helped expand their own awareness of the expertise available within their countries.



Weaver in Ando Kpomey, Togo. Photo: Christine Fiebig

The way forward in planning Smart Energy Paths for Benin, Mali and Togo

Each national Liaison Committee is developing an action plan outlining the principles of a Smart Energy Path to disseminate to national decision-makers, so that they can integrate them into the national energy framework

and identify concrete projects and programmes to implement. In Togo, priority is given by the National Committee to decentralised energy services in rural communities, efficient cook stoves, and enhanced building codes, while the committee in Benin is focusing on sustainable biofuels, use of wastes, energy efficiency of charcoal production and solar energy for collective (community energy) services.

The committee in Mali is exploring synergies with existing institutions and plans, such as the National Action Plan on Renewable Energy, the National Action Plan on Energy Efficiency, and the Sustainable Energy for All agenda.

To complement the national actions of the Liaison Committees, the project team formed a Regional Stakeholder Council to discuss and disseminate the principles developed in the EERA project, beyond the limits of projects and countries. Composed of individual experts from five francophone African countries, the group developed a Common Declaration, which was presented at the 20th annual Conference of the Parties (COP 20) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Peru in December 2014. The Declaration states that the development of the energy system must:

- be progressive, driven by development needs, with a priority to satisfy the needs for collective energy services (health, education, water, etc.) and productive uses; only then would universal energy access follow.
- respect multidimensional constraints relating to the environment, health, climate vulnerability, social and economic factors.
- rely on a relevant institutional and regulatory framework that facilitates participatory governance and reinforces the role of decentralised authorities.

The Common Declaration is expected to be used at local, national and regional levels to advocate and



promote the implementation of relevant Smart Energy Path frameworks; these frameworks will then help identify projects of interest to investors. The need to define the basis for a global climate agreement at COP21 in Paris in December 2015 constitutes a key opportunity to mobilise local, national and

international stakeholders over the need to renew the principles of climate compatible energy development. This must focus on the needs of the population and be based on participatory governance, where all stakeholders – beyond energy decision-makers – are involved.

Endnotes

- 1 HELIO International (2014a) *Framework for a smart energy path* – A guide to sound energy decisions. Paris: HELIO International. <http://www.helio-international.org/toolkit/sep>
- 2 ADA Consulting and KAPI Consult (2011). *Évaluation des besoins en accès aux services énergétiques modernes (énergie solaire) des infrastructures de la santé et de l'éducation au Togo*. Lomé, Togo: United Nations Development Programme – Togo and Ministry of Energy, Togo.
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- 4 Ibid.
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- 8 Coulibaly, A. and Bonfiglioli, A. (2011) *Programme de valorisation à grande échelle des énergies renouvelables dans les pays à faible revenu (SREP) – Étude d'État des lieux* (in French). Coordinated by the National Directorate of Energy and the African Development Bank.

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The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channelling the best available knowledge on climate change and development to support policy processes at the country level (www.cdkn.org).

About HELIO International

HELIO International is a recognised global network of independent energy analysts. Created in 1997, its primary objective is to comprehend, evaluate, measure and make public the contribution of energy policies to ecodevelopment. HELIO's experts conduct wholly independent evaluations of national energy policies and inform economic and political decision-makers as to their validity and effectiveness. The experts also provide analysis, evaluation and monitoring of projects and provide advice on ecodevelopment and climate stabilisation. HELIO works in collaboration with the major networks and organisations in the areas of energy and development (www.helio-international.org).



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